Electronic Version
Stylesheet Version v1.1.1

Claims

[c1] What is claimed is:

1.An optical disc drive includes:

an optical pickup for reading an RF datum in an optical disc;

an FM demodulator for demodulating the RF datum so as to generate a bi-phase datum;

a bi-phase data rule checker connected to the RF demodulator for checking if phases at each edge of neighboring bit cells of the bi-phase datum generated by the FM demodulator are different;

a bi-phase data corrector connected to the bi-phase data rule checker for generating a plurality of bi-phase data when the bi-phase data rule checker detects that at least one pair of phases at the edges of neighboring bit cells are not different;

a bi-phase demodulator connected to the bi-phase data corrector for demodulating the plurality of bi-phase data so as to generate a plurality of ATIP(Absolute Time In Pre-groove) signals;

a CRC checker connected to the bi-phase demodulator for testing the plurality of ATIP signals transmitted from the bi-phase demodulator; and

a multiplexer connected to the bi-phase demodulator and the CRC checker for selecting a correct ATIP signal transmitted from the bi-phase demodulator according to a test result of the CRC checker.

[c2] 2.The optical disc drive of claim 1 further comprising an RF amplifier connected to the optical pickup and the FM demodulator for amplifying the RF datum read by the optical pickup.

[c3] 3.The optical disc drive of claim 1 further comprising a data buffer connected to the bi-phase demodulator and the multiplexer for temporarily holding the plurality of ATIP signals from the bi-phase demodulator.

[c4] 4.A method for processing data by an optical disc drive, the method comprising:
(a) reading an RF datum in an optical disc;
(b) demodulating the RF datum so as to generate a bi-phase datum;
(c) checking if phases at each edge of neighboring bit cells of the bi-phase datum are different;
(d) if phases at each edge of neighboring bit cells of the bi-phase datum are not different, generating a plurality of bi-phase data corresponding with the rule that phases at each edge of neighboring bit cells of the bi-phase datum are different according to the bi-phase datum;

(e) demodulating the plurality of bi-phase data generated in step (d) so as to generate a plurality of ATIP signals;

(f)testing the plurality of ATIP signals; and

(g)selecting a correct ATIP signal according to a test result in step (f).

[c5] 5.The method of claim 4 further comprising amplifying the RF datum from the optical disc.

[c6] 6.The method of claim 4 wherein in step (d) when n phases at each edge of neighboring bit cells of the bi-phase datum are not different, generating a plurality of bi-phase data comprises generating 2^n bi-phase data corresponding with the rule that phases at each edge of neighboring bit cells of the bi-phase datum are different according to the bi-phase datum.

[c7] 7.The method of claim 4 further comprising after step (e) temporarily holding the plurality of ATIP signals.

[c8] 8.An apparatus for implementing the method of claim 4.